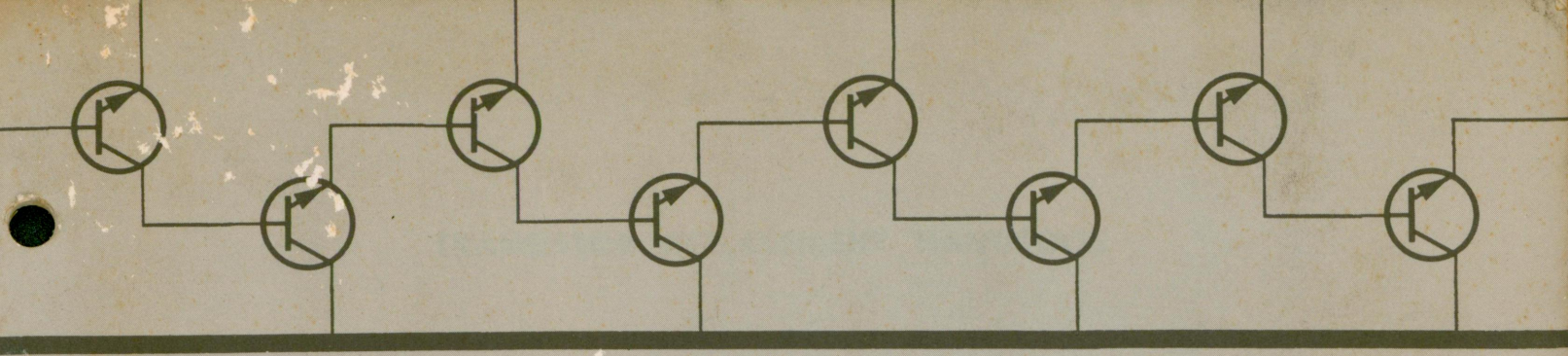

Transistor Replacement Handbook

for

SONY®

black & white tv receivers

PRODUCT ENGINEERING DIVISION
SONY CORPORATION OF AMERICA
47-47 VAN DAM STREET
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TRANSISTOR REPLACEMENT HANDBOOK

INTRODUCTION

This publication has been produced to help you, the service technician, in selecting the correct replacement semiconductors for SONY black and white TV sets. The book is arranged by model number and lists the correct transistor plus recommended substitutes for each stage. In many cases, the substitute transistor (which may replace a discontinued type), requires a change in the circuitry. The required circuit changes, in addition to any circuit adjustments that should be made, are listed in the columns marked MODIFICATION and ADJUSTMENT.

HOW TO USE THIS HANDBOOK

Consult this handbook whenever a transistor is to be replaced in a SONY TV. Look up the TV model in the table of contents and find the page that covers the set in question. The transistors are listed by schematic symbol number in the left column. The center column lists the original transistor by type number followed by all of the recommended replacements. If a circuit change is needed for a particular replacement, the required circuit change is described in the right column, next to the replacement transistor type. For example, the illustration below shows part of the listing for the TV4-203UW/4-204UW. Next to transistor X1 (first i-f amplifier) we find the original transistor 2SA166 listed. Below that is a recommended substitute, 2SA456. To the right of 2SA456 is the circuit change required if the 2SA456 is substituted for the original 2SA166.

TV4-203UW, 4-204UW

Schematic Symbol No.	Semiconductor Type	Modification and Adjustment
X203	2SA16□	
	2SA45□	Circuit modification necessary See Fig. 2.
X1	2SA166	
	2SA456	Change C304 to 1.5 pF

In some cases, transistors are listed with a square in the last space of the type number as shown in the accompanying illustration for transistor X203. In this case it is recommended that the replacement transistor be a duplicate of the original. If this set used a 2SA162 replace it with a 2SA162. However, if an exact duplicate is not available, you can substitute another transistor whose type number begins with 2SA16 and ends with any other digit. Thus, in the same example, you can substitute a 2SA160, or 2SA161 or 2SA163, etc., up to and including 2SA169. You can also use transistor type 2SA450 or any following numbered type up to and including 2SA459 (if an exact duplicate is not available), since 2SA45□ is also listed as a recommended replacement. If any 2SA45□ transistor is used, make the changes shown in Fig. 2.

CAUTION

Follow this handbook, and do not use substitutes that are recommended by the guides published by other manufacturers. Often these guides are based upon a small sampling of transistor parameters and the recommended replacement will result in degraded performance. In some circuits, these "universal" replacements will not work at all or will result in needless call backs.

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Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SA280 2SA448	
X201	2SA16□ 2SA45□	Change C206 from 2.1pF to 0.5pF. See Fig. 1.
X202	2SA16□ 2SA45□	
X203	2SA16□ 2SA45□	Change C221 from 4pF to 6pF " C222 " 7pF " 5pF " C223 " 10pF " 15pF " R209 " 1kΩ " 2kΩ " R210 " 2.7kΩ " 3.3kΩ " R211 " 10kΩ " 9.1kΩ " R212 " 2.7kΩ " 4.7kΩ See Fig. 2.
X1	2SA166 2SA456	Change C304 to 1.5pF
X2	2SA163 2SA455	Change C310 to 0.5pF
X3	2SA162 2SA454	Change C315 to 1.0pF
X4	2SA70	
X5	2SC73 2SC401 2SC402 2SC403	R327, 47Ω, must be shorted " " " " "
X6	2SB379 2SB382 2SB383	
X7	2SB381 2SB378 2SB383	

Symbol No.	Semiconductor Type	Modification/Adjustment
X8	2SA122 2SA124	
X9	2SA122 2SA121	
X10	2SD64 2SC401 2SC402 2SC403	 Change R413 to 12kΩ " " " " " " " "
X11	2SB379 2SB382 2SB383	
X12	2SB382 2SB383	
X13	2SD64 2SD127 2SD128	
X14	2SA323 2SA60	
X15	2SC115 2SC470	Adjust R506 for 20V ± 2V across R509 Adjust R506 for 20V ± 2V across R509
X16	2SC73 2SC401 2SC402 2SC403	 Change R601 from 10kΩ to 15kΩ " R602 " 680kΩ "100kΩ " " " " " "
X17	2SB382 2SB383 2SB379	See Fig. 3.
X18	2SD65	
X19	2SD65	

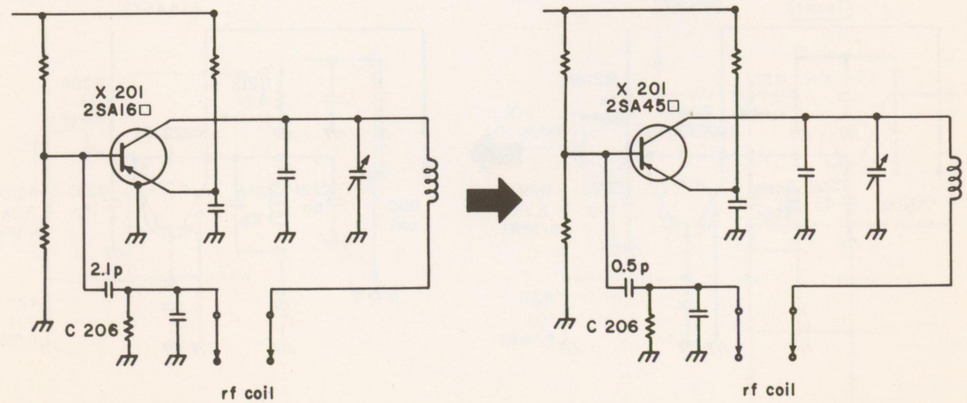


Fig.1

Symbol No.	Semiconductor Type	Modification/Adjustment
X20	2SD65	Adjust VR-9 and VR-10 for for 0.17 to 0.18V across R712. Also, voltage be-between 10V line and collector of X20 or X21 should be 3.8V ± 0.2V.
X21	2SD65	Same as above
X22	2SB381 2SB383	" " "
X23	2SB381	Check for a pulse width of 11 to 12.5μs at the base of X24. Change C803, if necessary, to obtain correct pulse width.
X24	2SB382	Check for an emitter current of 8-12 mA. Change R805 if necessary to obtain correct current.
X25	2SC41	
X26	2SC382 2SC383	Set B+ to 10V±0.2V with VR-13 " " " " " " "
X27	2SB382 2SB383	" " " " " " "
X28	2SD64	" " " " " " "

Diodes

D101	1T13	
D4	1T22	
D5	1T22	
D6	1T23	
D7	1T23	
D8	1T261	
D9	1T22A	
D10	1T22A	
D11	1T22A	
D12	1T22A	
D13	SD-1Z HFSD-1Z HFSD-1A	
D14	2SC40 SD-1A	See Fig. 4 (page 3)
D15	SD-1L HFSD-1A	
D16	1S332	
D17	1T22A	
D18	2SB378 2SB381 1T213	See Fig. 4 " " " " " "

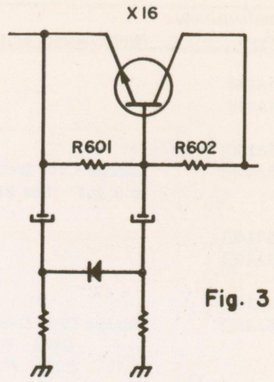


Fig. 3

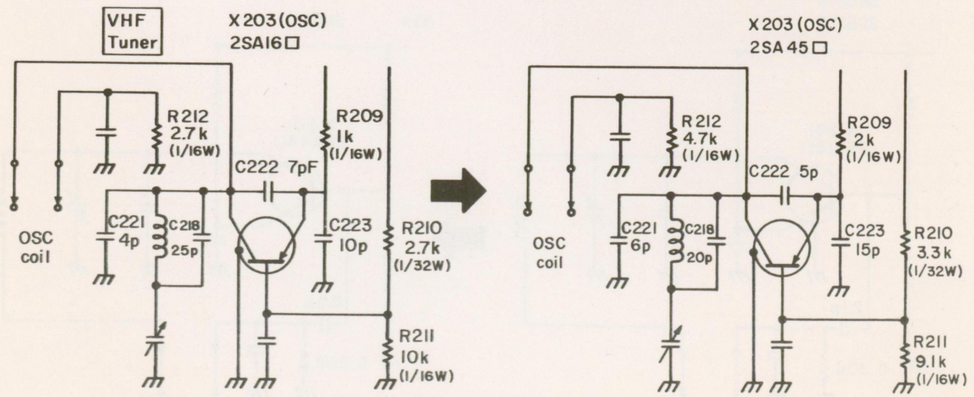


Fig. 2

Symbol No.	Semiconductor Type	Modification/Adjustment
X201	2SA16□	
X202	2SA16□	
X203	2SA16□	
X1	2SA70	
X2	2SA70	
X3	2SA70	
X4	2SA70	
X5	2SA70	
X6	2SC73 2SC401 2SC402 2SC403	
X7	2SA70	
X8	2SA70	
X9	2SD64	
X10	2SB381 2SB382 2SB383	X10 and X11 must be the same type number
X11	2SB381 2SB382 2SB383	X10 and X11 must be the same type number
X12	2SA323 2SA60	Adjust R502 for Vce of 1.5V " " " " " "
X13	2SC15 2SC115 2SC470	Adjust R504 for Ve of 2.6V " " " " " " " " " " " "
X14	2SC73 2SC402	Add R605, 56Ω, as shown in Fig. 5. Change R601 from 10kΩ to 56kΩ. Change R602 from 330kΩ to 680kΩ
X15	2SB379 2SB382 2SB383	
X16	2SB381 2SB383	
X17	2SB381 2SB383	
X18	2SC140 2SC292 2SC293	Adjust VR-9 for a Ve of 0.33V " " " " " " " " " " " "
X19	2SC140	H.S.C. must be adjusted for correct pulse width. See Fig. 6.
X20	2SC140 2SC291 2SC292 2SC293	
X21	2SC41	
X22	2SD65 2SC401	

Diodes

D1	1T22G 1T22A 1T22 1T261

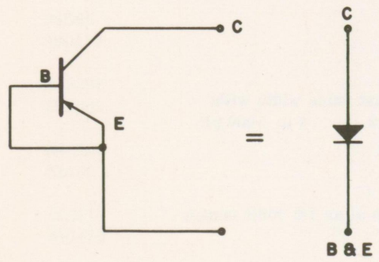


Fig. 4

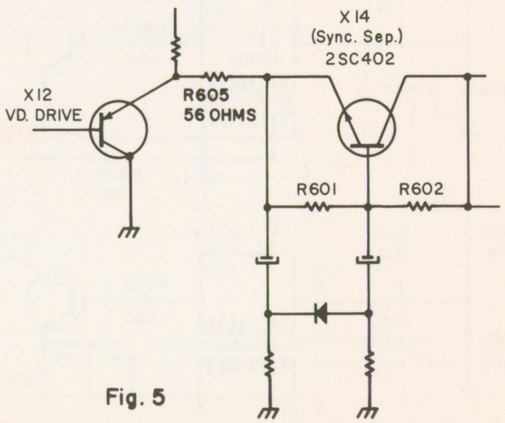
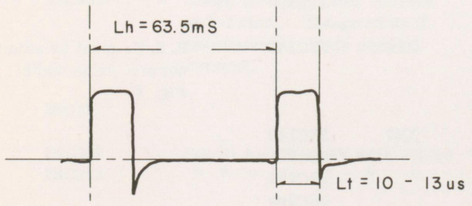
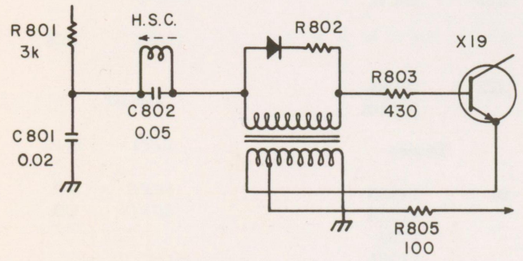


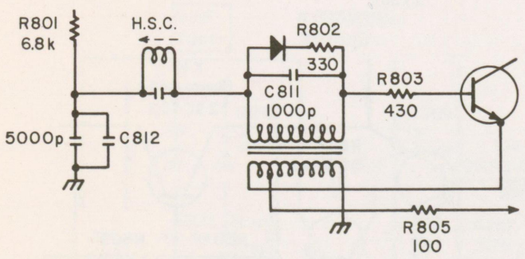
Fig. 5

Symbol No.	Semiconductor Type	Modification/Adjustment
D4, D5	1T23 1T22A	
D6	1T22A 1T22	
D7	1T261 1T22	
D8	1T22A 1T22	
D9	1T22A 1T22	
D10	1T22A 1T22	
D11	1T22A 1T22	
D12	1T22A 1T22	
D13	1T22A 1T22	
D14	SD-1LA HFSD-1A	
D15	SD-1LA HFSD-1A	
D16	S2A30	

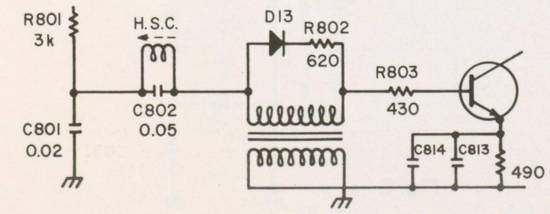




adjust pulse width with:
R802 75 to 300 ohms



adjust pulse width with:
C812 0 to 5000 pF



adjust pulse width with:
C814 0.01 to 0.05 μF

Two types of HBT transformers are used in the 5-303W. Older EF Boards usually have the 1-435-006-11, while the later boards have the 1-435-007-11. In addition, three different horizontal oscillator circuits will be found in the 5-303W; see Fig. 6. It is necessary to identify which of these three circuits is used in order to make the pulse width adjustment properly. Pulse width should be 10 to 13 μs when the 1-435-007-11 transformer is in use. Follow this procedure to adjust pulse width.

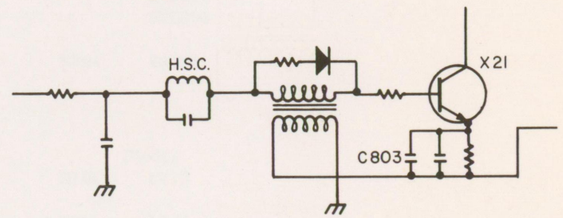
1. Observe the waveform at the emitter of X19.
2. Adjust pulse width by selecting R802, C812 or C814 (depending upon the circuit) for a pulse width of 10 - 13μs.

Fig. 6

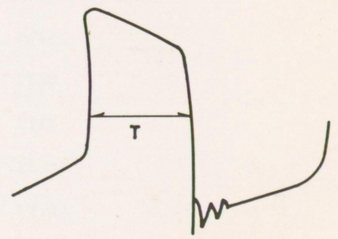
Symbol No	Semiconductor Type	Modification/Adjustment
X101	2SA280 2SA448	
X201	2SA16□ 2SA45□	See required circuit changes in Fig. 1. (page 1)
X202	2SA16□ 2SA45□	
X203	2SA16□ 2SA45□	See required circuit changes in Fig. 2. (page 2)
X1	2SA70	
X2	2SA166	
X3	2SA163	
X4	2SA162	
X5	2SA161 2SA162	
X6	2SC73 2SC401 2SC402 2SC403	
X7	2SB381 2SB383	
X8	2SA124 2SA122	
X9	2SA121 2SA122	
X10	2SD65 2SC401	
X11	2SB381 2SB383	
X12	2SD65 2SD127	
X13	2SB381 2SB383	
X14	2SA323 2SA60	
X15	2SC115 2SC470	Adjust R505 for an Ic of 2.4±0.2mA " " " " " " "
X16	2SC73	
X17	2SB382 2SB379 2SB383	
X18	2SD65 2SD127 2SD128	
X19	2SB381 2SB383	
X20	2SC140 2SC292 2SC293	Adjust VR-9 for 0.3V across R713
X21	2SC140 2SC352	Select value of C803 for correct pulse width. See Fig. 7.
X22	2SD65 2SC401	
X23	2SC140 2SC291 2SC292 2SC293	
X24	2SC41	

Diodes

D101	1T13
D2	1T22
D4	1T22
D5	1T23
D6	1T23



HOR. Pulse width adjustment



Waveform between Emitter and Ground
T must be adusted to 10~12μs with C803

Fig. 7

Symbol No.	Semiconductor Type	Modification/Adjustment
D7	1T22	
D8	1T22	
D9	1T22	
D10	1T22A	
D11	1T22A	
D12	1T22A	
D13	SD-1LA HFSD-1A	
D14	SD-1LA HFSD-1A	
D15	S2A30	

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SA448	
X201	2SA16□ 2SA45□	See required circuit changes in Fig. 1. (Page 1)
X202	2SA16□ 2SA45□	
X203	2SA16□ 2SA45□	See required circuit changes in Fig. 2. (Page 2)
X301	2SA45□	
X302	2SA45□	
X303	2SA455	
X304	2SB378 2SB381 2SB383	
X305	2SB378 2SB381	
X401	2SC403	
X402	2SC403	
X501	2SC15 2SC470	Select R505 for 20V across R509
X551	2SD64 2SD65 2SC401 2SC402 2SC403	See required circuit changes in Fig. 8
X552	2SB381 2SB382 2SB383	

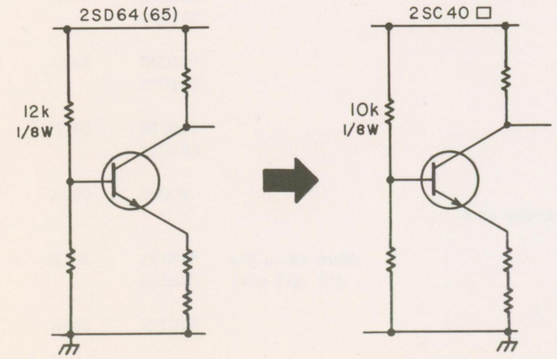


Fig. 8

Symbol No.	Semiconductor Type	Modification/Adjustment
X553	2SD65 2SD127 2SD128	
X554	2SB382 2SB383	
X601	2SC73 2SC401 2SC402 2SC403	See required circuit changes in Fig. 9.
X602	2SB379 2SB382 2SB383	
X701	2SD64 2SD65 2SD127 2SD128	
X702	2SB381 2SB383	
X703	2SC292 2SC293	
X801	2SC352	See Fig. 7 for pulse width adjustment.
X802	2SD65 2SC401	
X803	2SC291 2SC292 2SC293	
X804	2SC41	

Diodes

D101	1T13
D301	1T26
D303	1T22
D401	1T23
D402	1T23
D601	1T22
D602	1T22A
D603	1T22A
D604	1T22A
D702	1T22A
D801	1T22A

Symbol No.	Semiconductor Type	Modification/Adjustment
D802	HFSD-1A SD-1LA	
D803	HFSD-1A SD-1LA	
D804	S2A30	

Symbol No.	Semiconductor Type	Modification/Adjustment
D403	SD-1Z SD-1A	
D404	SD-1Z SD-1A	

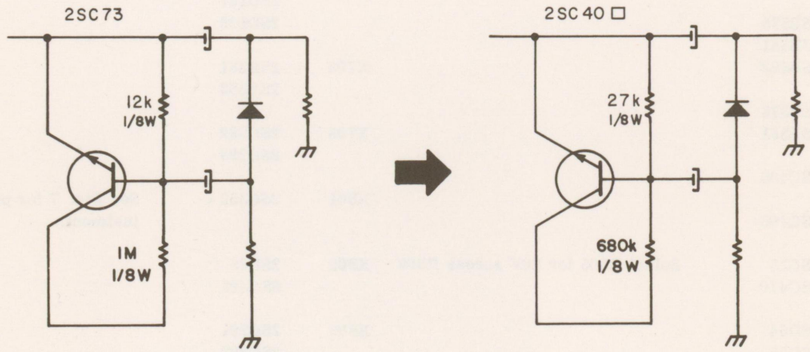
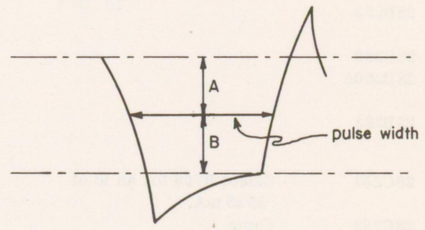


Fig. 9

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SC288A	
X201	2SC657	
X202	2SC629	
X203	2SC629	
X301	2SC657	
X302	2SC657	
X303	2SC629	
X304	2SB382 2SB383	
X305	2SB382 2SB383 2SB22	
X306	2SC401 2SC402 2SC403	
X401	2SC403	
X402	2SC403	
X501	2SC470	Select R502 for an Ic of 3.6±0.2mA.
X551	2SC401 2SC633 2SC634	
X552	2SD127 2SD128	
X553	2SB382 2SB383	
X601	2SB380 2SA202	
X701	2SD127 2SD128	
X702	2SB382 2SB383	
X703	2SD29	
X801	2SB381 2SB383	Adj pulse width (see Fig. 10)
X802	2SC756	

Symbol No.	Semiconductor Type	Modification/Adjustment
	Diodes	
D101	SD82A	
D302	1T22A	
D401	1T240 1T241 1T243 1T263	
D402	1T23	
D403	1T23	
D601	1T22A	
D602	1T22A	
D603	1T22A	
D801	HFSD-1Z HFSD-1A	
D802	S2A30	
D803	UFSD-1A	

HOR. Pulse adjustment



Waveform at X801 (emitter and ground)
Pulse width must be adjusted to 8.0μs ± 0.5μs with C804 at the point where A=B

Fig. 10

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SA448	
X201	2SA454 2SA455	
X202	2SA453 2SA454	
X203	2SA455 2SA454	
X301	2SA456	
X302	2SA456	
X303	2SA455 2SA454	
X304	2SB381 2SB382 2SB383	
X401	2SC403 2SC403A	
X402	2SC403 2SC403A	
X501	2SC470	Ic must be 5.7 ±0.3mA with no signal
X551	2SC401 2SC633 2SC634	
X552	2SD127 2SD128	
X553	2SB382 2SB383	
X601	2SB380 2SB380A	
X701	2SB383	
X702	2SC293	Select R706 for an Ic of 35 ±5 mA.
	2SC299	Same
	2SC756	Same
X801	2SB381	Check horiz pulse width. See Fig. 11.
	2SB383	Same
X802	2SC41	Check horiz pulse width. See Fig. 11.
	2SC756	Check horiz pulse width. See Fig. 11.

Symbol No.	Semiconductor Type	Modification/Adjustment
	Diodes	
D101	1T13 1S1000A	
D301	1T261	
D302	1T23	
D401	1T23	
D402	1T23	
D601	1T22A	
D602	1T22A	
D501	HFS-1A	

The procedures for adjusting horizontal pulse width depend upon the production run for the set. For serial numbers below 107,200, refer to Fig. 11a. First short R809 and measure T2. If it is 4μs or less leave the short across R809. If T2 is greater than 4μs, select values for R809 between 3.9 to 100 ohms to obtain a T2 shorter than 4μs.

For sets with serial numbers 107,201, and higher, select values of R807 for a T1 of 23.5 to 25.5μs. See Fig. 11b.

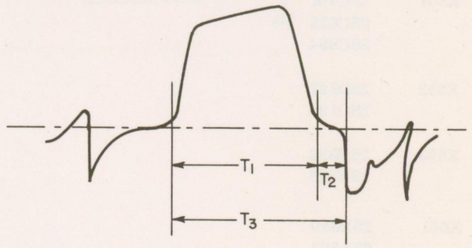


Fig. 11a

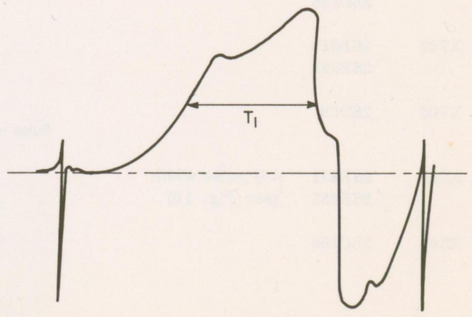


Fig. 11b

Symbol No.	Semiconductor Type	Modification/Adjustment
D502	1T240 1T241 1T243 1T263	
D701	1T22A SD-07	

Symbol No	Semiconductor Type	Modification/Adjustment
D801	DGINR	See required circuit change in SD-07 Fig. 12. (Deleted if DGINR is used for D801)
D901	SD-1Z SD-1A	
D803	SD-1A	

When replacing D801 and/or D802, replace with a single DGINR diode as shown in Fig. 12. This change has been incorporated into late production runs.

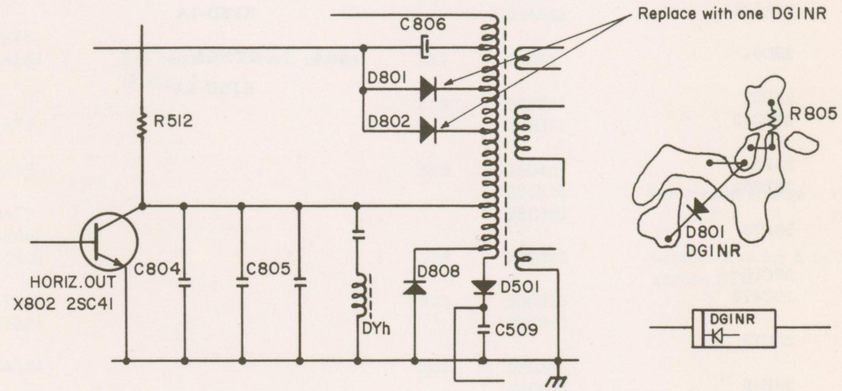
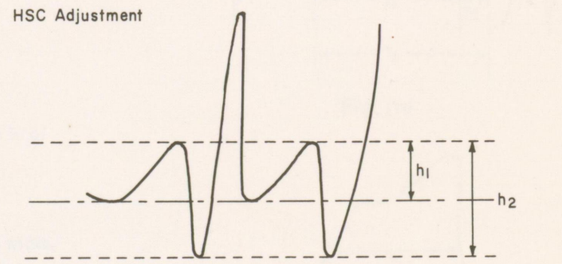


Fig. 12

Symbol No.	Semiconductor Type	Modification/Adjustment
X201	2SA16□	
X202	2SA16□	
X203	2SA16□	
X1	2SA124	
X2	2SA124	
X3	2SA124	
X4	2SA124	
X5	2SD65	
X6	2SA122	
X7	2SA122	
X8	2SD64	
X9	2SB52 2SB382	
X10	2SB52 2SB382	
X11	2SC73	
X12	2SC15 2SC470	
X13	2SC73	
X14	2SB49 2SB379	
X15	2SB51 2SB381	
X16	2SB51 2SB381	
X17	2SB146 2SB147 2SB232	Adjust VR-9 for 0.29V across R128
X18	2SB51 2SB381	Adj. horiz. stab. coil (See Fig. 13)
X19	2SB144 2SB232	Adjust VR-11 for an Ie of 150mA
X20	2SC41	
	Diodes	
D1	1T26J 1T26	
D4	1T23A	

Symbol No.	Semiconductor Type	Modification/Adjustment
D5	1T23A	
D6	1T22	
D7	1T22	
D8	1T22	
D9	1T22	
D10	1T22	
D11	1T22	
D12	1T2013 S2A30	
D13	1T2015 HFSD-1A	
D14	1T2015 HFSD-1A	

HSC Adjustment



Waveform must be adjusted as above by turning HSC core.

Fig. 13

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SA280 2SA448	
X201	2SA16□ 2SA45□	See required circuit change in Fig. 1. (page 1)
X202	2SA16□ 2SA45□	
X203	2SA16□ 2SA45□	See required circuit change in Fig. 2. (page 2)
X1	2SA70	
X2	2SA70	
X3	2SA70	
X4	2SA70 2SA163	See required circuit change in Fig. 14.
X5	2SA70	
X6	2SA70	
X7	2SA73 2SC401 2SC402	
X8	2SB381 2SB383	
X9	2SA124	
X10	2SA121 2SA122	

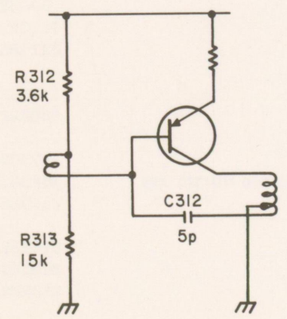


Fig. 14

Symbol No.	Semiconductor Type	Modification/Adjustment
X11	2SD64 2SC401 2SC402 2SC403	
X12	2SB382 2SB383	X12 & X13 must be the same transistor type
X13	2SB382 2SB383	Same as above
X14	2SA323 2SA60	
X15	2SC15 2SC470	Select R505 for a collector voltage of 39-47V.
X16	2SA60 2SA323	
X17	2SD65	
X18	2SB381 2SB383	
X19	2SD65 2SC115 2SC352	See circuit change - Fig. 15b " " " - Fig. 15c
X20	2SB232	Adjust VR-9 for 0.24V across R715
X21	2SC115 2SC352	
X22	2SD65 2SC401	
X23	2SC140 2SC292 2SC293	
X24	2SC41	
X25	2SC41	
	Diodes	
D101	1T13	
D3	1T22G 1T22	
D4	1T23 1T22A 1T22	
D5	1T23 1T22A 1T22	
D6	1T22A 1T22	

Symbol No	Semiconductor Type	Modification/Adjustment
D7	1T22A 1T22	
D8	1T22A 1T22	
D9	1T22A 1T22	
D10	SC240 SD-1Z HFSD-1Z HFSD-1A	
D11	1T22A 1T22	
D12	S2A30	
D13	S2A30	
D14	SD-1LA HFSD-1A	
D15	SD-1LA HFSD-1A	
D16	1T240	

Circuit Modification (X19)

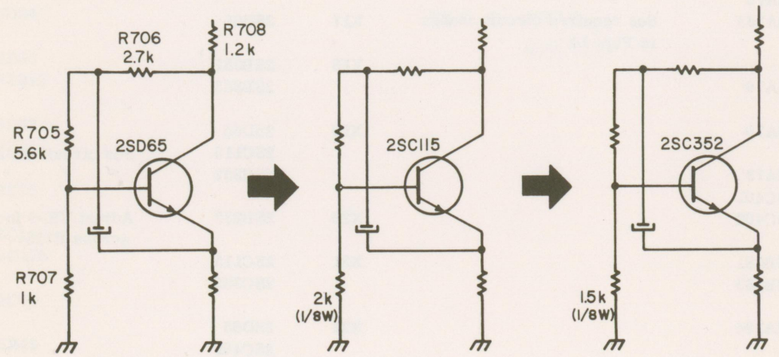


Fig. 15

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SA448 2SC288A	(BT-162 Tuner) (BT-192 Tuner)
X201	2SA161 2SA454	
X202	2SA453	
X203	2SA163 2SA455	
X301	2SA456	
X302	2SA455 2SA456	
X303	2SA454 2SA455	
X304	2SB378 2SB381 2SB383	
X305	2SB378 2SB381 2SB383	
X401	2SC403	
X402	2SC403	
X501	2SC115 2SC470	
X551	2SD65 2SD64 2SC401 2SC402 2SC403	Change R551 from 12kΩ to 10kΩ " " " " " "
X552	2SB381 2SB382 2SB383	
X553	2SD65 2SD127 2SD128	
X554	2SB381 2SB383	
X601	2SC73 2SC401 2SC403	See circuit changes - Fig. 16. " " " " "
X602	2SB379 2SB382 2SB383	
X603	2SC402 2SC401 2SC403	Used in later models. See Fig. 16.

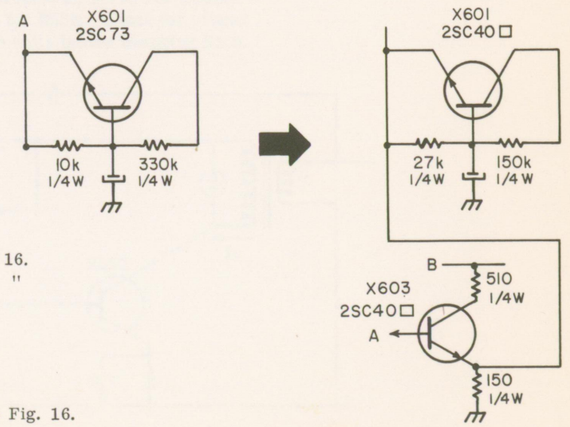
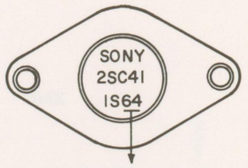


Fig. 16

Symbol No.	Semiconductor Type	Modification/Adjustment
X701	2SD65 2SD127 2SD128	
X702	2SB381 2SB382 2SB383	
X703	2SC299 2SC293 2SC756	
X801	2SB381 2SB383	
X802	2SC291 2SC292 2SC293 2SC756	Select R806 for Ic of 70-80mA " " " " " " " " " " " 90-100mA
X803	2SC41	Use only transistors with last two digits of 24, 34, 44, 54, 64, 74, 84. See Fig. 17 for location of digits.
	Diodes	
D101	1T13 1S1000A	(BT-162 Tuners) Reverse polarity if 1T13 is replaced with 1S1000A
	SD-82A	(BT-192 Tuners)
D301	1T26	
D401	1T22A	
D402	1T23	
D601	1T22 1T22A	

Symbol No.	Semiconductor Type	Modification/Adjustment
D602	1T22 1T22A	
D603	1T22 1T22A	
D604	1T22 1T22A	

Symbol No	Semiconductor Type	Modification/Adjustment
D501	HFSD-1Z HFSD-1A	
D801	SD-07	Late models, D801 and 802 have been replaced with a single DGINR (D801).
D802	SD-07	
D803	SD-1A	



The last two digits are indicated here

Fig. 17

Symbol No.	Semiconductor Type	Modification/Adjustment
X101	2SC288A	
X201	2SC657	
X202	2SC629	
X203	2SC629	
X301	2SC657	
X302	2SC657	
X303	2SC629	
X304	2SB382 2SB383	
X305	2SB382 2SB383 2SB22	
X306	2SC401 2SC402 2SC403	
X401	2SC403	
X402	2SC403	
X501	2SC470	Select R502 for an Ic of 8±1mA.
X551	2SB383 2SB382	See circuit adjustments in Fig. 18,
X552	2SC298 2SC299 2SC756	" " " " "

Symbol No.	Semiconductor Type	Modification/Adjustment
X601	2SB379 2SB380 2SB382 2SB383	
X602	2SC401 2SC403A	
X603	2SB379 2SB382 2SB383 2SB22	
X701	2SB383	
X702	2SB381 2SB382 2SB383	
X703	2SC299 2SC293 2SC756	Adjust VR-704 for an Ic of 185 ± 5 mA
X801	2SB381 2SB383	
X802	2SC291 2SC292 2SC293 2SC756	Select R808 for an Ic of 50 - 58 mA
X803	2SC41	
X804	2SC41	

When X551 or X552 are replaced, the collector current (Ic) of X552 must be set to 120-130 mA by selecting values for R552. Check for proper supply voltage of 24 volts before changing R552.

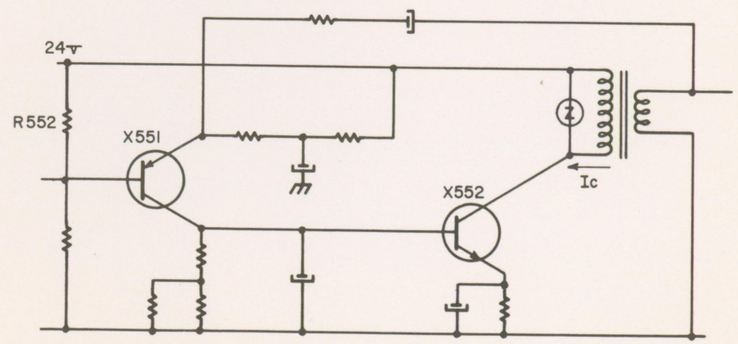


Fig. 18

Symbol No	Semiconductor Type	Modification/Adjustment
X901	2SB382 2SB383	
X902	2SC291 2SC292 2SC293 2SC756	
X903	2SD47	
	Diodes	
D101	SD82A	
D302	1T22 1T22A	
D401	1T240 1T241 1T243 1T263	
D402	1T23	
D403	1T23	
D404	1T22A	

Symbol No	Semiconductor Type	Modification/Adjustment
D501	HFSD-1A HFSD-1Z	
D502	UFSD-1A	
D601	1T213	
D602	1T22	
D603	1T22	
D701	1T22A	
D702	1T22A	
D703	HFSD-1Z HFSD-1A	
D801	1T22A	
D802	1T204 SB-2	
D803	UFSD-1A	
D901	1T240 1T241 1T243	

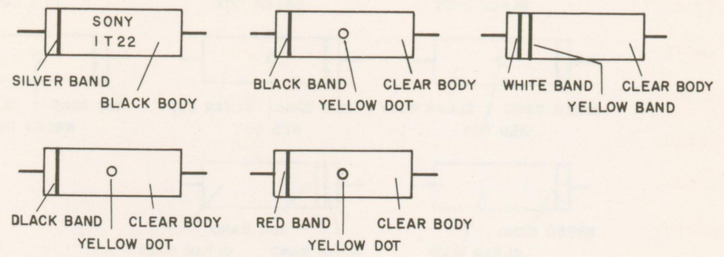
Symbol No.	Semiconductor Type	Modification/Adjustment
Q101	S-2617	
Q201	SE-5020	
Q202	2SC629	
Q203	2SC629	
Q301	2SC657	
Q302	2SC657	
Q303	2SC629	
Q304	2SB382 2SB383	
Q401	2SC403A	
Q402	2SC403A	
Q501	2SC470	
Q551	2SC633	
Q552	2SB382 2SB383	
Q553	2SB382 2SB383	
Q601	2SB380	
Q701	2SB383	
Q702	2SB382 2SB383	
Q703	2SD29	
Q801	2SB381 2SB383	
Q802	2SC756	

Symbol No.	Semiconductor Type	Modification/Adjustment
	Diodes	
D101	1S750	
D301	1T261	
D302	1T22 1T22A	
D303	1T22 1T22A	
D304	1T22 1T22A	
D401	1T243 1T240 1T241	
D402	1T23	
D403	1T23	
D501	HFSD-1Z	
D502	1T22A	
D601	1T22A	
D602	1T22A	
D701	1T22A	
D702	1T22A	
D801	SB-2	
D802	SD-1A	
D803	1T22A	

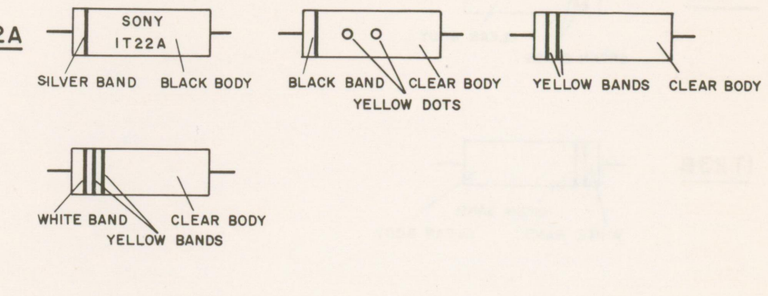
Symbol No.	Semiconductor Type	Modification/Adjustment
Q101	S-2617	
Q201	SE-5020	
Q202	2SC629	
Q203	2SC629	
Q301	2SC657	
Q302	2SC657	
Q303	2SC629	
Q304	2SB382 2SB383	
Q305	2SB382 2SB383	
Q401	2SC403A	
Q402	2SC403A	
Q403	2SC403A	
Q501	2SC805	
Q551	2SC633	
Q552	2SB382 2SB383	
Q553	2SC633	
Q554	2SB383	
Q555	2SB383	
Q601	2SB382 2SB383	
Q602	2SC633	
Q701	2SB383	
Q702	2SB383 2SB382	
Q703	2SD29	
Q801	2SC403A	
Q802	2SD28	
Q803	2SC895	
Q901	2SB407	
	Diodes	
D101	1S750	
D302	1T22 1T22A	
D401	1T243	
D402	1T23	
D403	1T23	
D501	UFSD-1A	
D502	HFSD-1Z HFSD-1A	
D601	1T22A	
D602	1T22A	
D701	1T22A	
D702	1T22A	
D801	1T22A	
D802	SB-2	
D901	SD-1Z	
D902	SD-1Z	

COLOR CODE FOR DIODES USED IN SONY TV RECEIVERS

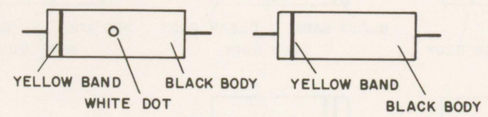
1T22



1T22A



1T22B



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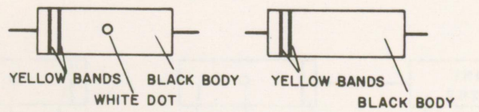
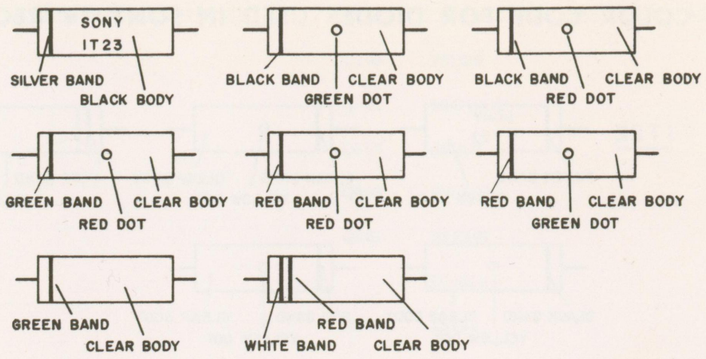


IT23



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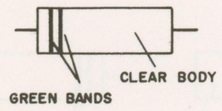

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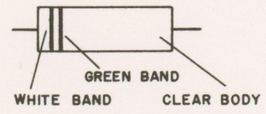

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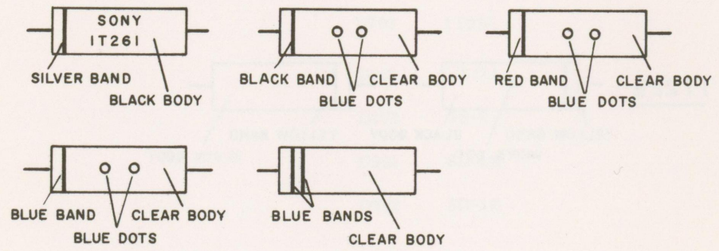
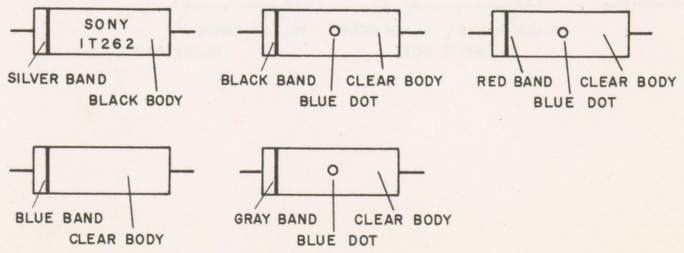
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